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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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09/973,270

10/05/2001

Donald C. D. Chang

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THE DIRECTV GROUP INC

PATENT DOCKET ADMINISTRATION RE/R11/A109

P O BOX 956

EL SEGUNDO, CA 90245-0956

EXAMINER

WONG, LINDA

ART UNIT

PAPER NUMBER

2634

DATE MAILED: 01/25/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/973,270

Applicant(s)

CHANG ET AL.

Examiner

Linda Wong

Art Unit

2634

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 05 October 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 16-19 is/are allowed.
- 6) ☒ Claim(s) 1-7, 9 and 11-15 is/are rejected.
- 7) ☒ Claim(s) 8, 10 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 05 October 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                        | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)               | Paper No(s)/Mail Date. _____  |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date. _____   | 6) <input type="checkbox"/> Other: _____                                    |

## DETAILED ACTION

### *Specification*

1. The disclosure is objected to because of the following informalities:
  - a. On page 5, paragraph 0028, line 4, the mention of radiating elements 24 is not shown in Fig. 2.
  - b. On page 9, paragraph 0042, line 4, the word "Nyquest" is misspelled. It is suggested that "Nyquest" change to "Nyquist".

Appropriate correction is required.

### *Claim Objections*

2. Claim 1 is objected to because of the following informalities:
  - a. **Claim 1**, line 8, should match the drawings provided. The A/D converters do not transform the "received signal". The A/D converters transform the "output from LNA" or "the amplified received signals".
  - b. **Claim 5**, line 3, the term "A" and "fs" are not defined within in the claim.
  - c. **Claim 6**, line 3, all abbreviations mentioned the first time should include the full written terminology. For example, the full terminology for SHF is Superhigh Frequency, EHF is Extreme High Frequency, etc.

Appropriate correction is required.

### *Claim Rejections - 35 USC § 112*

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3. **Claims 5 and 6** are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter, which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.
  - a. **Claim 5**, line 3, the term "fs" is not defined within the specification.
  - b. **Claim 6**, line 3, SHF, KU and EHF are mentioned in the specification, but not pertaining to whether the present invention can convert such signals at these frequencies.

***Claim Rejections - 35 USC § 102***

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

4. **Claims 1, 2, 3, 4, 7, 9, 11, 13, 14, 15** are rejected under 35 U.S.C. 102(a) as being unpatentable by the admitted prior art of the instant application.
  - a. Regarding **claim 1**, lines 1-9, the prior art (Fig. 2A) discloses a mobile satellite payload having a phase array antenna (label 26), receive radiating elements, a plurality of low noise amplifiers (LNAs) (label 28) and a plurality of analog-to-digital (A/D) converters (label 32). The mobile satellite comprises of received signals formed from communications signals with receive radiating elements, amplified received signals within the plurality of LNAs (label 28), and transforming the received signals into digital baseband signals within the plurality of A/D converters (label 32). (Fig. 2A)

- b. Regarding **claim 2**, lines 1-3, the admitted prior art (Fig. 2A) discloses A/D converters (label 32) that filters (label 48) the received signals. (Fig. 2A)
- c. Regarding **claim 3**, lines 1-2, the admitted prior art predetermines the sampling rate using the Nyquist theorem. (page 7, paragraph 0034)
- d. Regarding **claim 4**, lines 1-3, it is well known to one skilled in the art and the admitted prior art discloses the method of using Nyquist to maintain or prevent aliasing while sampling within the A/D converters. (paragraph 0034)
- e. **Claim 7** inherits all the limitations of claim 1.
- f. Regarding **Claim 9**, the admitted prior art discloses a phase array antenna (label 22), a plurality of low noise amplifiers (label 28), and a plurality of analog-to-digital converters (label 32). (Fig. 2A)
- g. Regarding **Claim 11**, the admitted prior art discloses a plurality of A/D converters (label 32) that incorporate the function of a filter (label 48). (Fig. 2A)
- h. Regarding **Claim 13**, the admitted prior art discloses a filter within the plurality of A/D converters that can perform a low pass or band pass filtration dependent on the type filtration needed.
- i. Regarding **Claim 14**, the admitted prior art discloses a formula for the sampling rate that changes with the frequency of the received signal. (page 7, paragraph 0035, line 5)
- j. Regarding **Claim 15**, the prior art discloses LNA coupled to the antenna, and A/D converters coupled to the LNA that transfers the received signal into a digital baseband signal. Although the prior art included does not disclose an

antenna, it is inherent that such a system would have an antenna in order to receive the communication signals depicted in Fig. 2A, label 26. (Fig. 2A, labels 28 and 32)

***Claim Rejections - 35 USC § 103***

5. **Claim 6 and 12** are rejected under 35 U.S.C. 103(a) as being unpatentable over the admitted prior art of the instant application.
  - a. Regarding **claim 6**, although the prior art included does not teach the frequency bands SHF, KU, EHF, L-band, S-band and C-band, it is obvious to one skilled in the art would know that these bands are available to choose for frequency allocation depending on what the system will be used to perform. It would be a matter of design choice to transform received signals within these frequencies.
  - b. Regarding **claim 12**, although the prior art admitted does not teach that the A/D converters operate with various aperture times, it is obvious to one skilled in the art that with each received signal, a different aperture time would be used to sample such a signal to ensure that no aliasing will occur.

***Allowable Subject Matter***

6. **Claims 8 and 10** are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.
7. **Claims 16-19** are allowed.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Linda Wong whose telephone number is 571-272-6044. The examiner can normally be reached on 9-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen Chin can be reached on (571) 272-3056. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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A handwritten signature in black ink, appearing to read 'Stephen Chin', with a long horizontal line extending to the right.

**STEPHEN CHIN**  
**SUPERVISORY PATENT EXAMINER**  
**TECHNOLOGY CENTER 2600**